CLAIMS

1. A continuous process for producing oriented plastic tube comprising the steps of extrusion of a tube to an initial extruded diameter, temperature conditioning, diametrical expansion and cooling, characterised in that the process further includes the step of adjusting the diameter of the extruded tube to an adjusted diameter by means of a variable diameter calibrator located between said extrusion and temperature conditioning steps to control a circumferential draw ratio of said oriented tube produced.

2. A process according to claim 1, wherein said diametrical expansion step comprises application of an internal pressure to the tube within an expansion zone.

3. A process according to claim 2, wherein said internal pressure is limited at a downstream end by an expandable plug to maintain pressure within the expansion zone.

4. A process according to claim 3, wherein said internal pressure is limited at an upstream end by an upstream plug.

5. A continuous process for producing oriented plastic tube comprising the steps of extrusion of a tube to an initial extruded diameter and initial wall thickness, adjusting the diameter of the extruded tube to a first adjusted diameter by means of a variable diameter calibrator, temperature conditioning, diametrical expansion and cooling to produce oriented tube having a first circumferential draw ratio, and varying the adjusted diameter set by the variable diameter calibrator while said extrusion step continues, so as to produce oriented tube having a second circumferential draw ratio.

6. A process according to claim 5, further including the step of adjusting the extruded tube initial wall thickness, so as to alter the wall thickness of the oriented tube produced by the continuous process.

7. A process according to claim 6, wherein said step of adjusting said initial wall thickness comprises varying an upstream haul-off speed of said extruded tube and said step of adjusting said wall thickness of the oriented tube comprises varying a downstream haul-off speed of said oriented tube.

8. A continuous process for producing oriented plastic tube comprising the steps of extrusion of a tube to an initial extruded diameter and initial wall thickness, adjusting the diameter of the extruded tube to an adjusted diameter by means of a variable diameter calibrator, temperature conditioning, diametrical expansion and cooling to produce oriented tube having a first circumferential draw ratio and a first wall thickness, varying the extruded tube initial wall thickness, and making compensatory variation of the adjusted diameter set by the variable diameter calibrator so as to produce oriented tube having a second wall thickness and said first circumferential draw ratio.

9. A process according to claim 8, wherein said step of adjusting said initial wall thickness comprises varying an upstream haul-off speed of said extruded tube and said step of adjusting said wall thickness of the oriented tube comprises varying a downstream haul-off speed of said oriented tube.

10. A continuous process for producing oriented plastic tube comprising the steps of extrusion of a tube to an initial extruded diameter and initial wall thickness, adjusting the diameter of the extruded tube to a first adjusted diameter by means of a variable diameter calibrator, temperature conditioning, diametrical expansion and cooling to produce oriented tube having a first oriented tube diameter and a first circumferential draw ratio, varying the oriented tube diameter and thickness and making compensatory variation of the adjusted diameter set by the variable diameter calibrator so as to produce oriented tube having a second oriented tube diameter and said first circumferential draw ratio.

11. A process according to claim 10, further including the step of adjusting the extruded tube initial wall thickness.

12. A process according to claim 10, further including the step of maintaining continuous extrusion of said tube to said initial extruded diameter while said oriented tube diameter and adjusted diameter are varied.

13. A process according to claim 10, wherein said step of varying the oriented tube diameter comprises replacing a downstream tube sizing apparatus while said extrusion step continues.

14. A process according to claim 13, wherein said step of varying the oriented tube diameter further comprises replacing a diametrical expansion plug causing said diametrical expansion of the tube.

15. A continuous process for producing oriented plastic tube comprising the steps of extrusion of a tube to an initial extruded diameter, adjusting the diameter of the extruded tube to an operating adjusted diameter by means of a variable diameter calibrator, temperature conditioning, diametrical expansion and cooling to produce oriented tube having a circumferential draw ratio, further comprising a process start-up step in which said diametrical expansion step is not performed and said extruded tube is set by the variable diameter calibrator to a start-up adjusted diameter which is greater than said operating adjusted diameter, and subsequently resetting the variable diameter calibrator to said operating adjusted diameter.

16. A process according to claim 15, wherein said diametrical expansion step comprises application of an internal pressure to the tube within an expansion zone limited at a downstream end by an expandable plug to maintain pressure within the expansion zone, and wherein in said start-up step said expandable plug is in an unexpanded state and said start-up adjusted diameter is sufficiently large for the tube to pass over said expandable plug in its unexpanded state.

17. A process according to claim 16, wherein said step of subsequently resetting the variable diameter calibrator to said operating adjusted diameter is performed prior to expanding said expandable plug to cause said diametrical expansion of the tube.

18. A process line for production of oriented plastic tube, comprising an extruder for extruding a tube to an initial extruded diameter, a variable diameter calibrator for adjusting diameter of the tube following extrusion to an adjusted diameter, temperature conditioning apparatus for bringing the tube to a temperature suitable for expansion, expansion apparatus for causing diametrical expansion of the adjusted diameter tube and cooling means for setting the tube in its diametrically expanded configuration.